REMARKS

The claims have been amended to more clearly define the invention as disclosed in the written description. In particular, the claims have been amended for clarity. Applicants submit that the above changes to the claims are formal in nature only and do not affect the scope of the claims.

The Examiner has rejected claims 1, 2, 9-13 and 20 under 35 U.S.C. 1039a) as being unpatentable over U.S. Patent Application Publication No. 2005/0071561A1 to Olsen et al. in view of U.S. Patent Application Publication No. 2003/0145239A1 to Kever et al. The Examiner has further rejected claims 3 and 14 under 35 U.S.C. 103(a) as being unpatentable over Olsen et al. in view of Kever et al., and further in view of U.S. Patent Application Publication No. 2002/0045961A1 to Gibbs et al.

Applicants acknowledge that the Examiner has found claims 4-8 and 15-19 allowable over the prior art of record.

The Olsen et al. publication discloses an apparatus for reducing accesses to levels of a storage hierarchy in a computing system, in which the available capacity of a cache memory, used in conjunction with a mass storage device, is efficiently managed with regard to, for example, power consumption.

The Kevers et al. publication discloses dynamically adjustable cache size based on application behavior to save power, in which as much memory as possible is turned off to reduce power consumption. This reduction is controlled in two ways: memory that

is not accessed for a defined time is turned off, and, only memory that an application requires is turned on (Abstract, last 7 lines).

In the current Office Action, the Examiner indicates that Olsen et al. teaches ""determining an optimum buffer size for which the power consumption of said subsystem is a minimum" ([0008], efficiently managing available capacity of a cache is important for power consumption and [0028], managing levels of storage hierarchy by limiting cache usage to specific parts) "for a given streaming bit-rate to/from said buffer memory" ([0028] and [0035], current throughput demands. Throughput is defined in [0021] as data per unit time)."

Applicants submit that the Examiner is mistaken. In particular, there is no disclosure or suggestion of how the buffer size is to be determined. Rather, Olsen et al. merely presumes a certain cache size (page 2, paragraph [0026] and page 3, paragraph [0031]), while managing the available capacity, e.g., by using heuristics to determine the data that should be cached {page 1, paragraph [0008]), and by using the cache memory as a FIFO device and starting a flushing operation when the cache memory reaches a specified capacity (e.g., 75% full)(page 3, paragraph [0031]).

The Examiner states that Olsen discloses "efficiently managing available capacity of a cache for power consumption of a system". This is accurate given the text of paragraph [0008]. However, the Examiner's statement "Olsen does not appear to explicitly disclose how the capacity is managed" is misleading in that it suggests that Olsen et al. contemplates managing the

capacity or the size of the cache. Applicants submit that there is no disclosure or suggestion in Olsen et al. of managing the capacity (or size) of the cache.

The Examiner's statement "...and [0028], managing levels of storage hierarchy by limiting cache usage to specific parts)" is also misleading. Paragraph [0028] of Olsen et al. states:

> "[0028] It should be understood that a system 100 according to the invention is not limited to the configuration described herein and will apply to any storage hierarchy based on the system designer's requirements. The system 100 manages levels of a storage hierarchy by taking additional information or energy-conserving criteria into account, which is not considered in existing systems. **The energy-conserving criteria include limiting the use of a cache to specific files or parts of files, such as parts of a file system or files accessed by a specific application**; the amount of power being used by the system 100; the remaining life of the battery 110 (e.g., running low on charge); dynamically determining whether to cache depending on the current system state, such as whether an HDD 104 is currently spinning, and what current throughput demands are; and adjusting cache policies as a function of certain metrics, such as expected battery lifetime or Flash erasure cycles. (emphasis added)"

It should be apparent from the above that the term "specific parts" noted by the Examiner does not relate to the cache as implied by the Examiner, but rather, relates to the files using the cache. There is no disclosure or suggestion in Olsen et al. of limiting cache usage to specific parts of the cache.

While Olsen et al. discloses "throughput (TP)" and defines it as "the amount of data per unit time handled by the system", Olsen et al., at paragraph [0035] uses the TP in order to determine whether or not to cache, this being based on "the erase speed of

the Flash 108". However, there is no disclosure or suggestion of relating this throughput to the size of the cache.

While Kevers et al. discloses varying a buffer size by turning off various section of the buffer to minimize power consumption, Applicants submit that the combination of Olsen et al. and Kevers et al. neither discloses nor suggests the claim limitation "determining an optimum buffer size for which the power consumption of said subsystem is a minimum for a given streaming bit-rate to/from said buffer memory". It should be noted that similar limitations appear in claims 9 and 13.

The Gibbs et al. publication discloses a system and method for data transfer optimization in a portable audio device, in which a hard disk drive intermittently provides data to a buffer system, while a CODEC retrieves the data from the buffer system for rendering.

The Examiner now states "Gibbs, however, discloses deciding to activate a storage device depending on factors such as the data transfer rate of the storage device and a data sample rate ([0034])." While this is correct, it should be noted that Gibbs et al. is using the data transfer rate, as well as the start-up rate of the hard disk drive, to determine when to re-start the hard disk drive and re-start transferring data from the hard drive to the buffer before the buffer runs out of data.

However, Applicants submit that there is no disclosure or suggestion in Gibbs et al. that the data transfer rate and data sample rate should be used in determining an optimum buffer size.

Further, Applicants submit that Gibbs et al. does not supply that which is missing from Olsen et al. and Kevers et al., i.e., "determining an optimum buffer size for which the power consumption of said subsystem is a minimum for a given streaming bit-rate to/from said buffer memory".

In view of the above, Applicants believe that the subject invention, as claimed is not rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicants believe that this application, containing claims 1-20, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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